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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,586	10/24/2003	Yorimichi Dairoku	45934	6944
1609	7590	06/30/2006	EXAMINER	
ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P.			BERNSHTEYN, MICHAEL	
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SUITE 600				
WASHINGTON,, DC 20036			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/691,586	Applicant(s) DAIROKU ET AL.	
	Examiner Michael Bernshteyn	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/26/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-5 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on April 26, 2006. Applicants have amended claim 1; no new claims were added.
2. Claims 1-4 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. No description of "continuously passing the flow of the monomer liquid through a stirring apparatus in the path of the supply pipe line so that the flow of the monomer liquid is in a stirred state while continuously passing through the supply pipe line" is presented in the specification.

Claim Rejections - 35 USC § 103

4. The test of this section of Title 35, U.S.C. not included in this action can be found in a prior Office Action.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Ballard et al. (U. S. Patent 3,988,509) in view of Wu et al. (U. S. Patent 6,252,016), for the rationale recited in paragraph 2 of Office Action dated on January 26, 2006.

Response to Arguments

6. Applicants traverse the rejection under 35 U.S.C. § 103(a) of claims 1-4 as being unpatentable as obvious over Ballard et al. in view of Wu et al. Applicant's arguments have been fully considered but they are not persuasive.

7. Applicants crux is that as discussed in the specification, the claimed invention provides improved results that are unexpected by ordinary skill in the art. Example 1 bridging pages 20 and 21 of the specification discloses using an apparatus of Figure 3 where a flow of the monomer liquid is stirred in the supply pipe line by being passed through the stirring apparatus 12 so that the flow of the monomer liquid is in stirred state while passing through the supply pile line. The initiator is joined with the stirred flow of the monomer liquid "downstream from the rear of the element, thus preparing a mixed liquid 40". See page 21, lines 5 and 6. The element referred to this passage refers to the static mixer in the form of a "revolution twisted element" (page 21, line 1). Comparative Examples 1 and 2 were carried out in the same manner without the use of stirring apparatus 12. Therefore, Comparative Examples 1 and 2 correspond substantially to the process of Ballard et al. and Wu et al. (pages 4-5).

Furthermore, Applicants contend that claim 1 specifically recites passing a flow of the monomer liquid through a stirring apparatus in the path of the supply pipe line to produce a continuously stirred monomer liquid flow in the flow pipe line and thereafter introducing the initiator into the continuously stirred monomer liquid flow. Ballard et al. and Wu et al. do not disclose a stirring apparatus in a supply pipe line, a monomer liquid flow continuously stirred while passing through a supply pipe line, or the introduction of an initiator into a continuously stirred monomer liquid flowing through a supply pipe line (page 6, 3rd paragraph).

8. It is noted that the support for the amended claim 1 can be found on page 9, lines 19-21, and in the Example 1 on bridging pages 20 and 21 of the specification (page 4, 1st paragraph).

Page 9, lines 19-21 of the specification recite: " Particularly preferable is a stirrer having an inline structure of carrying out the stirring on the way of a pipe through which a flow of the monomer liquid continuously passed". The Example 1 on bridging pages 20 and 21 of the specification recite: "The monomer liquid 20 was **stirred with a stirring apparatus** having been prepared as a static mixer by inserting a 1.5-revolution-twisted element of 18.6 mm in length and 6 mm in diameter into a pipe of 6 mm in pipe diameter...The **mixed liquid** 40 was supplied onto a belt polymerization apparatus 70."

It is clearly from Figures 1 and 3 that the stirring apparatus 12 occupies only a relatively small part of the supply pipe 10, therefore, it is impossible to reach that the flow of the monomer liquid is in a stirred state while continuously passing through the supply pipe line, as claimed in amended claim 1.

It is worth to mention that the flow of the monomer liquid is in a stirred state only in the stirring apparatus 12 and may be in the closest area on its exit depending upon the stirring Reynolds number, which should clearly indicates the **turbulent flow**.

According the specification, the stirring Reynolds number was calculated at 2,280 (page 21, line 6).

It is noted that claimed in claim 4 critical Reynold's number (not smaller than 50) does not show the turbulent condition. It is well known fact that Reynold's number much below 2100 (for example, $Re=51$) correspond to streamline flow, while values **above 3000** correspond to **turbulent flow** (see Richard J. Lewis Sr. "Hawley's Condensed Chemical Dictionary", 14th Edition, John Wiley & Sons, Inc. page 963).

9. It is noted that Applicants intended to show the difference in these comparative example between the properties of the closest products. For example, it is necessary to find out the difference of the above properties between the process of the reference, which contains all limitations, and the instantly claimed process. However Applicants has not met the duty to prove that the process of the reference is necessarily different from the instantly claimed process.

10. It is completely unclear why Applicants contend that Comparative Examples 1 and 2 correspond substantially to the process of Ballard et al. and Wu et al. (pages 4-5).

Comparative Example 1 states that the polymerization initiator 30 was caused to join into a unstirred flow of the monomer liquid 20 using a supply pipe 10 as not equipped with a static mixer as a stirring apparatus (Specification, page 21, lines 24-26). As it was mentioned in the previous Office Action, Wu discloses that for all

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Examples, monomer emulsions were prepared by **admixing** butyl acrylate, methyl methacrylate, methacrylic acid, an anionic surfactant, an electrolyte, a chelating agent, and water **in a vessel**. **The admixture was stirred** until an emulsion was formed (col. 7, lines 11-15). In the example #1 a monomer emulsion was fed from monomer tank. **The feed tank** was equipped with a funnel, a **dip pipe**, **an agitator**, cooling capability, and a weigh scale. The monomer emulsion in the feed tank was constantly agitated in order **to insure homogeneity** (col.7, lines 18-23).

Therefore, the unexpected results are not commensurate in scope with the claims.

11. Applicants contend that the Action sites a single dictionary definition of a "vessel (tank)" as a tube that carries liquids. Furthermore Webster's Dictionary, Unabridged, from the same source as that cited in the Action defines a vessel as a "a hollow or conclave utensil for holding anything" Thus, a vessel is not necessarily a tube that carries liquids and the Action applies a very narrow definition for the term contrary to the intention of Wu et al.

12. It is noted that Applicants recites the only dictionary (Webster's Revised Unabridged, **1913 Edition**) with the above definition of the term "vessel". It is worth to repeat again that according to Cambridge Dictionaries online (www.onelook.com), vessel (tank) is a tube that carries liquids, and pipe is also a tube inside which liquid or gas flows from one place to another. Therefore, in a broad sense, there is no significant difference between vessel and pipe in the absence of pipe size defined in the claims.

13. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

14. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

15. In the light of the discussion above, the rejection of record has not been withdrawn. The rejection remains in force.

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Bernshteyn
Examiner
Art Unit 1713

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06/22/2006


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